

## NEW CADDIS FLY GENUS FROM TASMANIA.

(TRICHOPTERA: PLECTROTARSIDAE.)

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### Summary.

Following the discovery of nine specimens of a Plectrotarsid type caddis-fly from Tasmania it has been necessary to extend some of the family characters of Plectrotarsidae to include *Liapota lavara* gen. et sp. nov. described and figured in this paper. Additional information of the genus *Plectrotarsus* is also included.

### Introduction.

Since the description of the type species *Plectrotarsus gravenhorstii* Kolenati in 1848, the correct systematic position of the genus has long been in doubt. First placed in the family Sericostomatidae by Kolenati, and later in Phryganeidae by Banks (1913), the genus *Plectrotarsus*, comprising three species, was finally classified in the monogenetic family Plectrotarsidae erected by Mosely in 1953. Elongated mouth parts were given as a character distinguishing this family from others in the Inaequipalpia division.

The genus *Liapota*, described in this paper, does not possess the above character, but the wing venation and genitalia are an indication of closer association with Plectrotarsidae than with any other family in this division. Summarizing the distinguishing characters in the families with five-segmented maxillary palps in females and fewer segments in those of males, we can separate Sericostomatidae and Philorheithridae\* by the absence of ocelli, Phryganeidae by four-segmented maxillary palps in the males, and Limnephilidae by the termination of the radius in the posterior wing.

### Family PLECTROTARSIDAE.

*Sericostomatidae* Kolenati, 1848, Gen. et Spec. Trich. 1:94 (partim).

*Phryganeidae* Banks, 1913, Trans.Amer.ent.Soc. 39:234 (partim).

*Phryganeidae* Mosely, 1936, Proc.zool.Soc.Lond. 1936:395.

*Plectrotarsidae* Mosely, 1953, in Mosely & Kimmins "Trich. Austr. & N. Zeal." :20.

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\* The latter family is included for reference as the genus *Austrheithrus* Mosely described in this family cuts across the two main divisions, namely Inaequipalpia and Aequipalpia (Mosely & Kimmins 1953, p. 178).

The following are the amended taxonomic characters of the family to include the new genus *Liapota*.

Antennae not exceeding the length of wings, moderately stout to stout, basal segment bulbous, Ocelli always present, Maxillary palpi of the male three-segmented, of the female five-segmented. Mouth parts elongate or normal. Tibiae and tarsi armed with strong spines, tibial spurs varying—1:4:4 or 2:2:4 on the respective genera. Wing venation similar, or differing in the two sexes, according to species. Posterior wing with strong frenular hairs set at the humeral angle, the number is variable according to genus; radius terminates in the first apical sector or ends blindly before reaching the wing margin; discoidal cell very short.

#### KEY TO GENERA OF THE FAMILY PLECTROTARSIDAE.

Mouth parts elongate; Spurs 1:4:4; Two frenular hairs at the humeral angle of posterior wing . . . . *Plectrotarsus* Kol.

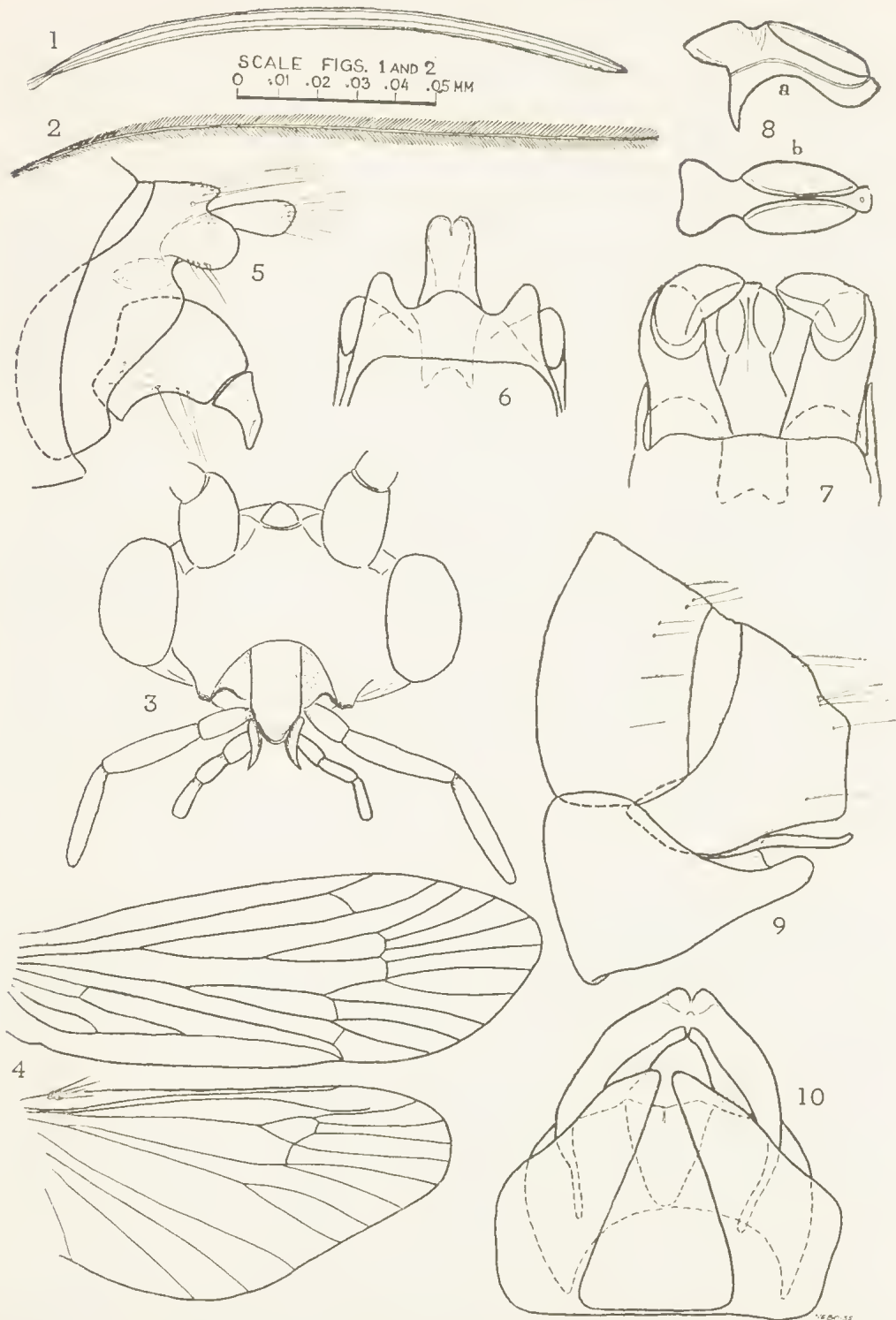
Mouth parts not elongate; Spurs 2:2:4; Four frenular hairs at the humeral angle of posterior wing . . . . *Liapota* gen. nov.

#### GENUS *Plectrotarsus* KOLENATI.

Some additional information on the distribution and morphology of this genus has been accumulated by the present author during the past five years.

Tillyard (1918) in his publication of wing-trichiation states that the wing scales of the genus *Plectrotarsus* "always show three or four striae". Besides this type of scale (Fig. 1) it was found that the anterior wing fringe is formed of feather-like hairs of unequal length (Fig. 2). This type of fringe has been found on specimens of all three *Plectrotarsus* species.

The generic description given by Mosely and Kimmins (1953) p. 21 contains a statement that in the anterior wings "forks nos. 1, 2, 3 and 5 present in the ♂, 1, 2, 3, 4 and 5 in the ♀; all the forks sessile . . . .". On comparing this with Figure 6, p. 22 it was noticed that in the anterior wing of the male all forks are sessile as stated in the description, while in the female fork no. 4 is stalked, the footstalk being about equal to the length of the fork. This character is present in the females of *P. gravenhorstii* and *P. tasmanicus* only, whereas in *P. minor* fork no. 4 is wanting. The latter species presents some further differences in the posterior wing venation. Radius is bent downward, merged in the first apical sector, but instead of R1 + 2 being joined to the wing margin, both veins are separated shortly before, thus forming a small additional fork



Figs. 1-2.—*Plectrotarsus gravenhorstii* Kol. : 1, scale from anterior wing; 2, feather like hair from anterior wing fringe.

Figs. 3-10.—*Liapota lavara* gen. et sp. nov.: 3, head from front; 4, ♂ wings; 5, ♂ genitalia lateral; 6, ♂ genitalia dorsal (penis and inferior appendages omitted); 7, ♂ genitalia ventral; 8, penis—(a), lateral; (b), dorsal; 9, ♀ genitalia lateral; 10, ♀ genitalia ventral.

above fork no. 1. This seems to be a somewhat unstable character, and as Mr. Kimmins informed, is present not only in the females, but also in one male paratype and a suggestion of it in another male. It is therefore necessary to amend the generic diagnosis describing the wing venation.

The anterior wings with forks nos. 1, 2, 3 and 5 present in the males; in some species the females possess an additional fork no. 4 which is stalked. In the posterior wing, radius bent strongly downward and merging in the first apical sector, sometimes separated just before reaching wing margin; discoidal cell very small; forks nos. 1, 2 and 5 present in both sexes. Two femoral hairs at the humeral angle of posterior wing.

*Plectrotarsus gravenhorstii* KOLENATI.

No definite Tasmanian localities are known to the present author. The Australian mainland localities and data are as follows: Victoria—8 specimens Buxton, 15.XII.1955; 2 spec. Tarrawarra, 29.XII.1953; 9 spec. Tarrawarra, 5.I.1954; 12 spec. Mordialloc (no date); 3 spec. Fitzroy River, 26.XII.1952. New South Wales—1 spec. Barrington Tops, Jan. 1925.

The above localities show that this species is comparatively widely distributed. All Victorian localities are in the vicinity of deep, rather slowly flowing rivers, and wide, partially swampy river flats which are often subject to flooding. No such detailed information on the New South Wales locality is available.

*Plectrotarsus tasmanicus* MOSELY.

The distribution recorded by Mosely (1936) is extended to King Island (Bass Strait) some 50 miles north-west of Tasmania by specimens (3♂ 7♀) collected by J. A. Kershaw, January 1907, and now in the National Museum of Victoria collection.

*Plectrotarsus minor* MOSELY.

This species is known only from a small area on the extreme south of Western Australia. Besides the type locality, Albany, a single female specimen has been taken 10 miles East of Nornalup, W.A. 17.xi.1958 by E. F. Riek, this specimen was available for the present study (CSIRO collection).

Anterior wings in both sexes similar, with fork no. 4 wanting. Posterior wings with radius bent downward, merging in the first apical sector, but sometimes both veins again separated before the wing margin, thus forming an additional fork above fork no. 1. This latter character is found in all known females, and also in two male specimens.

GENUS *Liapota*, GEN. NOV.

Type species *Liapota lavara*, sp. nov.

Spurs 2:2:4. Antennae stout, basal segment large, second short, third and the following ones slightly longer than the second. Ocelli present. Maxillary palpi of the male three-segmented; first segment short, second about two and half times the length of the first, third slightly shorter than second. Maxillary palpi of the female five-segmented, proportional lengths of the first three segments as in the male, fourth and fifth segments each about the same length as third. Mouth parts not elongated. Wings densely covered with yellow and white pubescence. The anterior wing discoidal cell is moderately long and narrow; cellula thyridii slightly longer than discoidal cell; forks nos. 1, 2, 3 and 5 present in both sexes, all sessile. In the posterior wing the discoidal cell is very short; radius bent downward, for a short distance running close and parallel to R<sub>2</sub>, and finally ending blindly before reaching the apex of the wing; forks nos. 1, 2 and 5 present. Four femular hairs set at the humeral angle.

The generic name is derived from a Tasmanian aboriginal word "Liapota," meaning "creek".

*Liapota lavara*, sp. nov.

(Figs. 3-10).

Head black, covered with white decumbent hairs; sparse, pale yellowish and erect ones along the posterior ridge. Antennae stout, dark brown. Frons and palpi yellowish brown, the former densely covered with golden yellow hairs, except for a patch of dark brown near the base of antennae; the pubescence on palpa is short, yellow and decumbent. Thorax dark brown; legs yellowish brown, densely clothed with yellow pubescence, spines dark brown, spurs yellow. Anterior wings covered with dense golden yellow pubescence; pattern of white pubescence forming narrow cross lines which are bordered with brown. Posterior wings concolorous yellowish brown.

*Genitalia* ♂—Although basically of the same pattern as that in the genus *Plectrotarsus* it is quite distinct. Superior appendages short and rounded. Upper penis cover elongate, hood-shaped, with the apex excised at centre. Penis short, bent and widened laterally. Inferior appendages two segmented; basal segment wide, bent strongly downward; second segment short, with distinct ventrolateral ridge, apex pointed.



*Genitalia* ♀—Ventrally terminates in a pair of somewhat triangular lobes which are connected by a rather transparent membrane. Dorsal plate flattened and excised at the apex, with a pair of finger-like processes just below it. A small ventral process is on the sixth sternite.

Length of the anterior wing, 5.5.–6 mm.

*Type material*.—Holotype ♂ : Cradle Mtn. Tas.; allotype ♀ : Wilmont, Tas.; 7 paratypes: 2 ♂ 1 ♀ Wilmont, Tas.; 2 ♂ 1 ♀ Cradle Mtn., Tas.; 1 ♂ Strahan, Tas. All specimens were collected by H. J. Carter and A. M. Lea. Holotype, allotype and five paratypes all in the South Australian Museum; two paratypes (♂ ♀) in the National Museum of Victoria (presented by the South Australian Museum). One paratype ♂ from Cradle Mtn. (SAM) is dissected and mounted as a microscope preparation.

*Distribution*—North-West Tasmania.

The trivial name is derived from a Tasmanian aboriginal word meaning "little".

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